

CLAIMS:

1. An electrophoretic display unit (1) comprising
 - an electrophoretic display panel (50) comprising a pixel (11) coupled to a pixel electrode (5);
 - data driving circuitry (30) for supplying a data pulse (D₁, D₂, D₃, D₄, D₅, D₆) to the pixel electrode (5) via a switching element;
 - a common electrode (6) coupled to the pixel (11) for receiving an alternating voltage signal (V₆); and
 - a controller (20) for controlling the data driving circuitry (30) for supplying a setting signal (S₁, S₂) to the pixel electrode (5) for reducing a voltage across the pixel (11) before a transition of the alternating voltage signal (V₆).
2. An electrophoretic display unit (1) as defined in claim 1, wherein the switching element comprises a transistor (12), having a gate, source and drain, the data driving circuitry (30) being coupled to the source via a data electrode (32) the selection driving circuitry (40) being coupled to the gate via a selection electrode (42), and the pixel electrode (5) being coupled to the drain.
3. An electrophoretic display unit (1) as defined in claim 1, wherein the data pulse (D₁, D₂, D₃, D₄, D₅, D₆) is supplied during a driving frame period (F_d); and the setting signal (S₁, S₂) is supplied during a setting frame period (F_s), the alternating voltage signal (V₆) having the transition after the setting frame period (F_s).
4. An electrophoretic display unit (1) as defined in claim 3, wherein the data pulse (D₁, D₂, D₃, D₄, D₅, D₆) is supplied during more than one consecutive driving frame period (F_d).
5. An electrophoretic display unit (1) as defined in claim 3, wherein the setting frame period (F_s) is shorter than the driving frame period (F_d).

6. An electrophoretic display unit (1) as defined in claim 1, wherein the alternating voltage signal (V_6) and the setting signal (S_1, S_2) have equal polarities during a setting frame period (F_s).

5 7. An electrophoretic display unit (1) as defined in claim 1, wherein an amplitude of the alternating voltage signal (V_6) and an amplitude of the setting signal (S_1, S_2) are substantially equal to each other during a setting frame period (F_s).

10 8. An electrophoretic display unit (1) as defined in claim 1, wherein the controller (20) is adapted to control the data driving circuitry (30) to provide - shaking data pulses; - one or more reset data pulses; and - one or more driving data pulses; to the pixel (11).

15 9. A display device comprising an electrophoretic display unit (1) as defined in claim 1; and a storage medium for storing information to be displayed.

20 10. A method of driving an electrophoretic display unit (1) comprising an electrophoretic display panel (50), which comprises a pixel (11) coupled to a pixel electrode (5), which method comprises the steps of - supplying a data pulse ($D_1, D_2, D_3, D_4, D_5, D_6$) to the pixel electrode (5); - supplying an alternating voltage signal (V_6) to a common electrode (6) coupled to the pixel (11) via a switching element; and 25 - controlling the data driving circuitry (30) for supplying a setting signal (S_1, S_2) to the pixel electrode (5) for reducing a voltage across the pixel (11) before a transition of the alternating voltage signal (V_6).

30 11. A driving unit (30, 20) for driving an electrophoretic display unit (1) comprising an electrophoretic display panel (50) comprising a pixel (11) coupled to a pixel electrode (5) and to a common electrode (6) for receiving an alternating voltage signal (V_6), the driving unit (30, 20) comprising: - data driving circuitry (30) for supplying a data pulse ($D_1, D_2, D_3, D_4, D_5, D_6$) to the pixel electrode (5) via a switching element.

- a controller for controlling the data driving circuitry (30) for supplying a setting signal (S_1 , S_2) to the pixel electrode (5) for reducing a voltage across the pixel (11) before a transition of the alternating voltage signal (V_6).